This is a system for retrieving information instantly and directly through computers and terminal stations, which provide researchers with information stored in automated systems and databases. The steps for the service are summarized as follows: meeting with the beneficiary before conducting the search to understand the nature of their information needs precisely, defining research concepts and terms, selecting the appropriate database(s) for connection to the appropriate information system, conducting direct search, evaluating results, presenting them to the beneficiary, and retaining a copy. Some university libraries provide direct connection search service (On-Line Search) through databases and information to which the library subscribes, free of charge, allowing searches via the internet. Some libraries provide full-text articles and research papers from databases offering (Full Text) services through the internet, and in some university libraries, users number up to 16,000 annually.

Direct connection search is defined as a system for retrieving information instantly and directly via computers and terminal stations that provide researchers with information stored in systems and databases. This service emerged in the early 1960s.

Direct connection search involves interacting with and performing tasks to read and review computerized information, including records or entries read by machines from a file or set of files. These databases are typically stored in large central computers connected to users searching for computerized information via terminals or minicomputers. For information retrieval, these minicomputers are connected to a modem that sends or receives and adjusts data, converting digital signals from the computer into standard signals, or vice versa.

Advantages of Direct Search:

1. Immediate and direct access to large amounts of information across various topics.

2. It is a flexible and efficient method for accessing information due to multiple access points, allowing researchers to use subject headings and descriptors.

3. Rapid updating of information with continuous additions of new data.

4. Reduction in effort spent on written and routine tasks in recording information through traditional methods.

5. Time-saving in searching and retrieving information.

Ted summarized the benefits of direct search service as follows:

1. Direct access to a wide range of information sources.

2. More effective searches due to extensive and multiple access options to automated information.

3. Less tedious written work, with the ability to obtain a printed copy of the results.

4. More up-to-date information.

5. Faster searches, requiring only 5% of the time needed for manual searches.

6. Ability to search in databases not available in printed form.

Services Provided by Direct Search:

1. Answering inquiries and providing users with the facts, figures, and information they need.

2. Referring to information sources using bibliographic resources that provide researchers with relevant information.

3. Ongoing alert services and selective broadcasting of information.

For direct connection search to function, four key components must be in place:

1. **Computer-stored and automatically read information sources or databases.**
2. **A distributor or service provider ensuring access to databases for subscribers.**
3. **Libraries, information centers, and research institutions subscribing to these databases and using them as part of their services.**
4. **A researcher familiar with the service, its procedures, and the final beneficiary of the service.**

The steps for providing the service include:

- **Meeting with the user before conducting the search to understand their precise information needs by defining research concepts and terms.**
- **Selecting the appropriate database(s).**
- **Connecting to the suitable information system and performing the search.**
- **Evaluating results, presenting them to the end-user, and retaining a copy.**

The service can also be provided indirectly, through database searches stored on CD-ROMs.

How Direct Connection Works

Development of Expert Systems Applications

An expert system is an application of artificial intelligence that can guide, analyze, explain, identify, design, and learn from human expertise in specific fields. It relies on the accumulated knowledge and expertise of professionals in a specific scientific or practical domain. Expert systems consist of components such as a knowledge base, working memory, inference engine, user interface, knowledge engineer, domain expert, and end-user.

Expert systems have been developed since the 1950s, starting with programming languages such as Prolog and LISP for artificial intelligence applications. The first expert system in the field of library and information services emerged in 1967 for reference services and responding to inquiries.